

**CITY OF CARLSBAD
CLASS SPECIFICATION**

JOB TITLE: TRAFFIC SIGNAL OPERATIONS SPECIALIST

DEPARTMENT: TRANSPORTATION

DISTINGUISHING CHARACTERISTICS:

Under minimal supervision, to operate and maintain the computerized traffic signal system; review and critique system software; install, configure and maintain devices related to traffic signal configurations, timing and connecting to a centralized Traffic Management Center; develop signal timing and response plans with computer based optimization.

Works under the technical supervision for general direction and review of completed and in progress work.

KEY RESPONSIBILITIES

Responsibilities and duties may include, but are not limited to, the following:

Expedite successful installations of traffic signal and communication equipment via participation on inspection teams; and complete acceptance testing to ensure equipment is properly installed and is operating in accordance with specification requirements.

Incorporate system diagnostic capabilities to detect early malfunction and ensure data integrity; assist technicians with troubleshooting field components such as detector operations and communications.

Establish, monitor and evaluate traffic system performance and benefits for central control software including closed loop, distributive and adaptive type systems.

Document the Traffic Management Center traffic control and communications systems; work with technicians to locate and document Traffic Systems' conduits, interconnect wired, wireless, and fiber optic networks; assist with signal systems and communications integration.

Operate and monitor the automated traffic signal control system and ITS field components during daily and special event operations.

Review and analyze traffic characteristics in the system; prepare timing plans and strategies; assist in developing and reviewing special event plans and system expansion plans; develop a migration to relocate the communications infrastructure.

Compile data for and prepare a variety of technical reports related to traffic engineering, traffic systems planning and automated traffic signal systems.

Inspect, diagnose and determine extent of necessary repairs of traffic signal system for referral to contractor or in-house repair; notify and coordinate with field personnel on emergency traffic signal maintenance and adjustment of timing.

Assist with design and implementation of traffic signal projects and coordinate outside vendors and agencies as needed.

Perform signal timing and fine-tuning in the field as required; develop and enhance signal control software for embedded systems as necessary.

Train and assist system users; give tours and demonstrate systems capabilities.

Perform related duties and responsibilities as required.

Knowledge of:

Automated signal control system operations and characteristics; traffic engineering principles and studies; signal timing and understanding of adaptive signal control; signal timing software such as Synchro or Passer; pertinent Federal, State, and local laws, codes, and regulations; personal computers and Microsoft Windows and Office products; and software packages related to automated signal control programs such as Quic Net Pro; traffic signal equipment and operations;.

Ability to:

Maintain, troubleshoot, and monitor the daily operation of an automated traffic signal control system; oversee and conduct acceptance testing to ensure equipment is properly installed and operating in accordance with specifications; perform system diagnostics for early detection of malfunctions and data integrity at traffic signal controller level; establish, monitor and evaluate traffic system performance and benefits; develop basic signal timing plans; troubleshoot end user network access; prepare routine technical reports related to traffic signal control and automated systems; operate personal computer and related peripherals; program and upgrade computer software; ; learn and utilize general networking protocol; establish and maintain cooperative working relationships with those contacted in the course of work; communicate effectively, both orally and in writing.

JOB RELATED QUALIFICATIONS:

Experience and Training Guidelines: Any combination of experience and training that would provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities are as follows:

Education: Bachelors of Science degree in engineering, computer science or related field; or education in electronic equipment and electrical technology with five years of professional experience with traffic communication systems.

Experience: Journey level professional traffic systems engineering experience working with computerized traffic signal control systems, Ethernet over copper and wireless technologies.

License/Certification Required: Possession of a valid California Driver's License by date of appointment, International Municipal Signal Association (IMSA) Level I certification within one year of appointment.

License/Certification Desired: IMSA Level II certification, Transportation Operations Specialist certification from Institute of Transportation Engineers (ITE)

ESSENTIAL FUNCTIONS

The conditions below are representative of those that must be met by an employee to successfully perform the essential functions of the job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential job functions.

Language Ability:

- Requires ability to compare, count, differentiate, measure and/or sort, assemble, copy, record and transcribe data and information. Must be able to classify, compute, tabulate, and categorize data. Must be able to advise and provide interpretation to others on how to apply policies, procedures, and standards to specific situations. Needs to be able to use a variety of descriptive data and information such as: a variety of plans; resolutions; maps; reports; computer software operating manuals; procedures; guidelines; and routine correspondence.
- Must be able to communicate orally and in writing, clearly and concisely and in a non-technical manner with city personnel at all levels; consultants; vendors; and the general public.
- Needs the ability to read, analyze, and interpret general business periodicals, professional journals, technical procedures, or governmental regulations. Must be able to write reports, business correspondence, and procedure manuals. Needs to effectively present information and respond to questions from groups of managers, clients, and the general public.

Mathematical Ability: Knows how to apply mathematics, including basic algebraic, plane geometric and trigonometric formulas. Must be able to demonstrate ability to calculate percentages, fractions, decimals, volumes, ratios, and spatial relationships. Needs to be able to interpret basic, descriptive statistical reports.

Judgment and Situational Reasoning Ability: Must be able to use functional reasoning and apply rational judgment when performing diversified work activities. Needs to be able to analyze data and information using established criteria in order to determine consequences and identify and select alternatives.

Physical Requirements:

- Needs to be able to operate equipment and machinery such as a computer keyboard and terminal, digitizer, plotter, blue line printers, photocopier, calculator, drafting instruments, and engineer and architect scale. Must be able to coordinate eyes, hands, feet and limbs in performing skilled movements such as rapid keyboard use. Needs to be able to recognize and identify degrees of similarities or differences between characteristics of colors, textures, and forms associated with job-related objects, materials, and tasks.
- Essential and marginal functions may require maintaining physical condition necessary for sitting for prolonged periods of time. Must be able to exert light physical effort, typically involving lifting, carrying, pushing and pulling of up to 50 pounds. Tasks may involve extended periods of time at a keyboard or workstation. Needs to be able to perform frequent downward flexion of neck, side-to-side turning of the neck, fine finger dexterity and grasp to manipulate the keyboard, telephone, writing instruments, papers, books, manuals, and reports.
- Job entails occasional walking, standing, bending, stooping, climbing, reaching at and above shoulders and twisting at the waist. On an infrequent basis, the incumbent must be able to squat and kneel.
- Work may involve outdoor fieldwork.
- Overtime and attending meetings outside regular work hours may be required. Work environment is professional and both team and autonomy oriented. This position is impacted by urgent time deadlines due to various reporting and filing requirements. This position is impacted by urgent time deadlines due to various reporting and filing requirements. Positions in Public Safety involve support of a 24/7/365 days environment and/or duties to support the Safety Department or City emergency operations.
- There is some repetitiveness in program coding, a need for extreme accuracy, and paying attention to detail. Additionally, there is a need to be able to shift attention before tasks are completed to be able to balance user demands, telephone and other interruptions.
- Must be able to drive and maintain a California Class C Driver's license or ability to arrange transportation for fieldwork or visits to other City facilities when necessary.

This classification specification does not constitute an employment agreement between the employer and employee and is subject to change by the City and the needs of the City and requirements of the job change.

The City of Carlsbad is an Equal opportunity Employer. In compliance with the Americans with Disabilities act, the City will provide reasonable accommodation to qualified individuals with disabilities and encourages both current and prospective employees to discuss potential accommodations with the employer.

DATE APPROVED: June 21, 2011